

REMARKS / ARGUMENTS

Amendments to the Specification and Drawings:

The paragraph on page 27, starting at line 14, has been amended to correct an inadvertent use of the reference numerals 72, 74 and 76 for different elements in Figure 4 and Figure 5. Figure 5 has been amended to match the amended specification, replacing the reference numerals “72”, “74” and “76” with the reference numerals --71--, --73-- and --75--, respectively. Applicant respectfully asserts that these amendments do not add new matter. Approval of these amendments is requested.

Status of the Claims:

Claims 1 – 21 are pending. Claims 1 – 8, 10 – 18 and 21 have been rejected. Claims 9, 19 and 20 have been objected to.

Claims 1-5, 7-15, and 17- 20 have been amended. Claim 21 has been cancelled without prejudice or disclaimer. New claim 22 has been added. Applicant respectfully asserts that the new claim and these amendments to the claims do not add new matter.

Voluntary amendments to the Claims:

Claims 2, 3, 11, 12 and 20 have been amended to make editorial changes and to correct inadvertent grammatical errors. Applicant respectfully asserts that these amendments do not narrow the scope of the claims and are not being made for reasons of patentability.

Claims 5 and 15 have been amended to replace “high sensitivity laser induced fluorescent detector” with -- laser induced fluorescent detector --. Applicant respectfully asserts that these amendments do not narrow the scope of the claims and are not being made for reasons of patentability.

Some of the claims have been amended to replace “biological sample” with -- sample--. Applicant respectfully asserts that these amendments do not narrow the scope of the claims and are not being made for reasons of patentability.

Claims 4 and 13 have been amended to replace “SDS polyacrylamide gel electrophoresis” with the term -- capillary sieving electrophoresis --, which is the suggested International Union of Pure and Applied Chemistry (IUPAC) nomenclature for such systems. “SDS polyacrylamide gel electrophoresis” is an older term.

Claim objections:

The Examiner has objected to claims 9, 19 and 20 under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim.

Claim 7 has been amended to be in independent form, therefore claim 9 no longer depends from a multiple dependent claim, thus curing the objection.

Claim 17 has been amended to be in independent form, therefore claim 19 no longer depends from a multiple dependent claim, thus curing the objection.

Claim 20 remains dependent from claim 19, which is now in proper form.

Claim rejections under 35 USC 112:

The Examiner has rejected claims 4 – 8, 13 – 18 and 21 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 as amended no longer recites the phrase “to perform the ... separation means”.

Claim 13 as amended explicitly recites “applying a voltage across said first separation means” and “applying a voltage across said second separation means.”

Claim 15 has been amended to recite “The method of claim 14” and no longer depends from itself.

Claim 21 has been cancelled without prejudice or disclaimer, thus rendering the rejection moot.

In view of the amendments to the claims and the preceding remarks, Applicant respectfully requests that the rejection of claims 4 – 8 and 13 – 18 under 35 USC 112, second paragraph, be withdrawn.

Claim rejections under 35 USC 102:

It is well established that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference (MPEP 2131).

The Examiner has rejected claims 1 – 2, 4, and 10 – 11 under 35 USC 102(b) as being anticipated by WO 95/33989.

WO 95/33989 discloses introducing a sample into a first capillary and applying voltage across the first capillary (page 17, lines 8-10). This results in the electrophoretic separation of the sample into “sample bands ... located at the end region of first capillary” (page 17, lines 14-15). According to WO 95/33989, “an important aspect of the present invention is the ability to transfer a **selected sample band** from a first capillary to a second capillary during an electrophoretic separation” (page 18, lines 5-7, emphasis added). The subsequent description of the intercapillary transfer uses the terminology “the selected sample band”, referring to a single selected sample band.

Therefore, WO 95/33989 does not disclose, either expressly or inherently, the limitation “*a second separation means to receive each of the fractions separately*”, as recited by amended claim 1.

Similarly, WO 95/33989 does not disclose, either expressly or inherently, the limitation “*an interface chamber in which fractions separated from a sample by said first separation means are to be mixed one at a time with a derivatizing agent prior to subjection of each of the fractions one at a time to said second separation means*”, as recited by amended claim 4.

Similarly, WO 95/33989 does not disclose, either expressly or inherently, the limitation “*separately passing each fraction through a second separation means*”, as recited by amended claim 10.

Accordingly, WO 95/33989 cannot anticipate claims 1, 4 and 10 as amended. Claims 2-3, 5-6, and 11-12 are dependent from claims 1, 4, and 10, respectively, and include all the limitations of the independent claims. Therefore, WO 95/33989 cannot anticipate claims 2-3, 5-6 and 11-12.

The Examiner has rejected claims 1, 4 – 5, 7 – 8, 10, 13 – 14, 17 – 18, and 21 under 35 USC 102(e) as being anticipated by US Patent 6,387,234 (Yeung et al.).

Claim 21 has been cancelled without prejudice or disclaimer, thus rendering the rejection moot.

Yeung et al. discloses an Integrated Multiplexed Capillary Electrophoresis System (title). “Sample(s) are chromatographed by the chromatographic columns 14a of the chromatographic column array 14 to yield purified sample portion(s). A sample or sample portion is “purified” in that it is essentially free or substantially free from non-detectable or non-targeted analyte materials or species.” (col. 6, lines 29-33) “Purified sample(s) are subsequently positioned at the injection region 91 of second junctions 32 and the separation capillary array 33. The separation capillary array 33 contains a plurality of individual separation capillaries 34.” (col. 6, lines 63-66) “An electrokinetic injection of the purified sample(s) into each separation capillary 34 is accomplished by using a syringe pump 19.” (col. 7, lines 3-5)

Yeung et al. does not consider the chromatographic columns to be a plurality of separation means. Rather, Yeung et al. describes the chromatographic columns as a “pre-separation system”. (col. 5, lines 60-67)

Therefore, Yeung et al. does not disclose, either expressly or inherently, the limitation “*a first separation means to separate a sample introduced into the first separation means into fractions; a second separation means to receive each of the fractions separately and to separate each received fraction into components*”, as recited by amended claim 1.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation *“a first and second separation means ... an interface chamber in which fractions separated from a sample by said first separation means are to be mixed one at a time ... prior to subjection of each of the fractions one at a time to said second separation means”*, as recited by amended claim 4.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation *“a plurality of first separation means, a plurality of second separation means”*, as recited by amended claim 7.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation *“introducing a sample through a first separation means to achieve a first separation into fractions ... and separately passing each fraction through a second separation means”*, as recited by amended claim 10.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation *“introducing a sample into a first separation means ... applying a voltage across said first separation means to separate the sample into fractions ... passing each fraction separately through a second separation means ... applying a voltage across said second separation means to separate the fraction into components”*, as recited by amended claim 13.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation *“a plurality of first separation means (each) linked by a respective interface means to a respective one of a plurality of second separation means”*, as recited by amended claim 17.

Accordingly, Yeung et al. cannot anticipate claims 1, 4, 7, 10, 13 and 17 as amended. Claims 2-3, 5-6, 8, 11-12, 14-16 and 18 are dependent from claims 1, 4, 7, 10, 13 and 17, respectively, and include all the limitations of the independent claims. Therefore, Yeung et al. cannot anticipate claims 2-3, 5-6, 8, 11-12, 14-16 and 18.

Moreover, even if one were to consider Yeung et al.'s chromatography as separation and the "purified sample portions" as some of the fractions separated from the sample introduced into the chromatographic columns, according to Yeung et al., only the purified sample portions are introduced into the separation capillary array 33. The other fractions are not introduced into the separation capillary array 33.

Therefore, Yeung et al. does not disclose, either expressly or inherently, the limitation "*a second separation means to receive each of the fractions separately*", as recited by amended claim 1.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation "*an interface chamber in which fractions separated from a sample by said first separation means are to be mixed one at a time with a derivatizing agent prior to subjection of each of the fractions one at a time to said second separation means*", as recited by amended claim 4.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation "*a respective second separation means is to separately receive each of the fractions*", as recited by amended claim 7.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation "*separately passing each fraction through the second separation means*", as recited by amended claim 10.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation “*passing each fraction separately through a second separation means*”, as recited by amended claim 13.

Similarly, Yeung et al. does not disclose, either expressly or inherently, the limitation “*separately passing each fraction into the respective second separation means*”, as recited by amended claim 17.

Accordingly, Yeung et al. cannot anticipate claims 1, 4, 7, 10, 13 and 17 as amended. Claims 2-3, 5-6, 8, 11-12, 14-16 and 18 are dependent from claims 1, 4, 7, 10, 13 and 17, respectively, and include all the limitations of the independent claims. Therefore, Yeung et al. cannot anticipate claims 2-3, 5-6, 8, 11-12, 14-16 and 18.

Claim rejections under 35 USC 103:

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (MPEP 2143.03)

The Examiner has rejected claims 3 and 12 under 35 USC 103(a) as being unpatentable over WO 95/33989 as applied to the claims above.

As explained above with respect to the rejections of claims 1 and 10 under 35 102(b) as anticipated by WO 95/33989, WO 95/33989 does not disclose, either expressly or inherently, all the limitations of claims 1 and 10. Therefore, WO 95/33989 does not teach or suggest all the limitations of claims 3 and 12. In particular, WO 95/33989 does not teach or suggest the limitation “*a second separation means to receive each of the fractions separately*” of amended claim 1 and the limitation “*separately passing each fraction through the second separation means*” of amended claim 10. Claims 3 and 12

include all the limitations of independent claims 1 and 10, respectively. Accordingly, the Examiner is requested to withdraw the rejection of claims 3 and 12 under 35 USC 103(a) as being unpatentable over WO 95/33989.

The Examiner has rejected claims 15 under 35 USC 103(a) as being unpatentable over WO 95/33989 as applied to the claims above and further in view of US Patent 5,110,431 (Moring).

WO 95/33989 has been discussed above with respect to claim 13, from which claim 15 depends. That discussion is applicable here as well. Moring fails to cure the deficiencies of WO 95/33989. In particular, Moring and WO 95/33989, alone or in combination, do not teach or suggest the limitation *"passing each fraction separately through a second separation means"*, as recited by amended claim 13. Claim 15 includes all the limitations of claim 13. Accordingly, the Examiner is requested to withdraw the rejection of claim 15 under 35 USC 103(a) as being unpatentable over WO 95/33989 in view of Moring.

The Examiner has rejected claims 5 – 8, 16 – 18, and 21 under 35 USC 103(a) as being unpatentable over WO 95/33989 as applied to the claims above and further in view of Yeung et al.

Claim 21 has been cancelled without prejudice or disclaimer, thus rendering the rejection moot.

As explained above with respect to claims 4, 7, 13 and 17, neither WO 95/33989 nor Yeung et al. teach or suggest the limitations that each of the fractions are separately

introduced into the second separation means. Therefore, WO 95/33989 and Yeung et al., alone and in combination, do not teach or suggest all the claim limitations of claims 5-8 and 16-18. Accordingly, the Examiner is requested to withdraw the rejection of claims 5-8 and 16-18 under 35 USC 103(a) as being unpatentable over WO 95/33989 in view of Yeung et al.

The Examiner has rejected claims 15 under 35 USC 103(a) as being unpatentable over Yeung et al. as applied to the claims above and further in view of Moring.

Yeung et al. has been discussed above with respect to claim 13, from which claim 15 depends. That discussion is applicable here as well. Moring fails to cure the deficiencies of Yeung et al. In particular, Moring and Yeung et al., alone or in combination, do not teach or suggest the limitation *"passing each fraction separately through a second separation means"*, as recited by amended claim 13. Claim 15 includes all the limitations of claim 13. Accordingly, the Examiner is requested to withdraw the rejection of claim 15 under 35 USC 103(a) as being unpatentable over Yeung et al. in view of Moring.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an


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interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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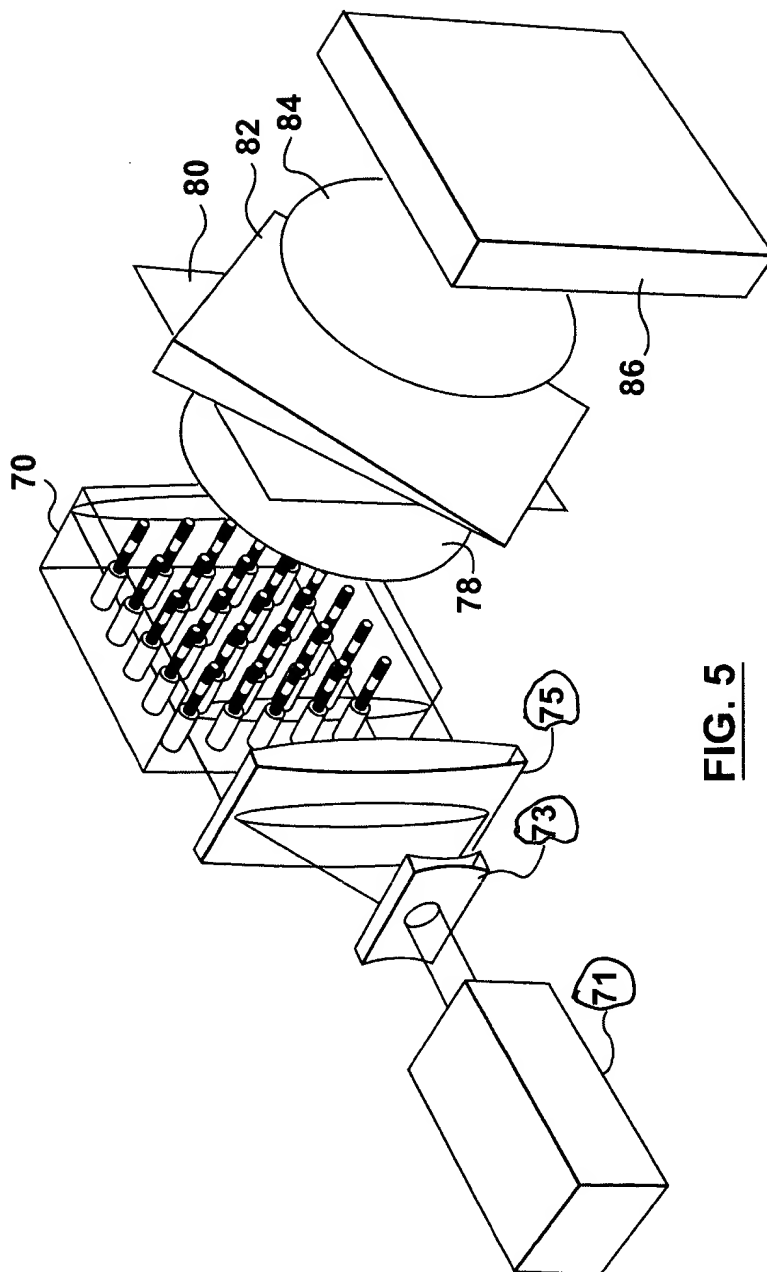


FIG. 5

